PDR Entrance Criteria Questions

Planning

- Was a chairperson assigned?
- Did the review agenda address all applicable PDR Review Elements
- Was the Systems Engineering Technical Review Board properly staffed, and did the appropriate competencies participate in the review?
- Was a Systems Engineering Plan (SEP - formerly Systems Engineering Management Plan (SEMP)) developed and implemented?
- Was a Manpower Estimate Report completed and approved? (ACAT 1 Only)
- Was the Acquisition Strategy developed and documented?
- Does the Acquisition Strategy address a plan to satisfy HSI requirements for each domain addressed in the Capability Development Document (CDD)/Capability Production Document (CPD) (formerly ORD), including minimum standards for those domains not specifically addressed in the CDD/CPD?

1 Program Schedule

1.1 Does the Program have an updated schedule with sufficient detail to support development? Are the tasks linked in a network analysis schedule?

1.2 Is the schedule built upon bottom-up task planning?

1.3 Is the schedule reflective of available resources?

1.4 Does the program schedule have an identified critical path and is that critical path consistent with overall technical risk?

1.5 What is the status versus Critical Path?

2 Management Metrics

2.1 Cost / Schedule / Performance / Key Performance Parameters (KPP) – Status versus Plan. Is the latest revised estimate of each KPP in accordance with the Acquisition Program Baseline? Are the program risks and technical results reflective of KPP's?

2.2 Latest cost estimate – Is the cost estimate consistent with the technical risk of the program, the critical path plan and available resources?

2.3 Estimate of production costs – Is the estimate for production costs consistent with the Preliminary Design as disclosed? Are all elements of production cost addressed?

2.4 Estimate of O&S Costs – Is the estimate for O&S costs consistent with the Preliminary Design as disclosed? Are all elements of O & S cost addressed?

2.5 Have supportability analysis products from the system integration work effort been made available to the PDR participants prior to the review?
2.6 Are current logistics documents available for review (ALSP, LRFS, and Preliminary Maintenance Plan)?
2.7 Have all prior logistics review RFA's been properly dispositioned, and closed?
2.8 Earned Value Management (EVM)
- 2.8.1 Is the EVM data up-to-date?
- 2.8.2 Is the EVM baseline being used as a program execution tool (i.e. by management and at the working level?
- 2.8.3 Are the work packages measured on earned value vice level of effort?
- 2.8.4 Is the EVM data consistent with known technical risks and challenges in the program?
- 2.8.5 Are the EVM data being used to adjust program resources to address risk issues?
- 2.8.6 Have the events to track EVM been clearly defined and linked to progress measurement to understand the status of the product development?

2.9 Work Breakdown Structure (WBS) review
- 2.9.1 Is the WBS consistent with the technical risks of the program?
- 2.9.2 Is the WBS broken down to an appropriately detailed level to address all technical tasks?
- 2.9.3 Are all CIs (as identified in the Preliminary Design) addressed in the WBS (including software)?
- 2.9.4 Are the requirements tracked, traced, and modeled using an automated tool?

2.10 Software metrics – Status versus Plan
- 2.10.1 Are adequate software metrics in place and being used to manage the software effort?
- 2.10.2 Do the metrics indicate status versus plan? What level of risk do the metrics indicate?
- 2.10.3 Staffing level metrics – Is the software staffing adequate for the magnitude/complexity of the software and the level of software risk?
- 2.10.4 Size metrics – Are the software sizing metrics adequate and consistent with the preliminary design? Do they indicate readiness for detailed design?
- 2.10.5 Are Computer resource utilization metrics known and allocated to CI?
- 2.10.6 Are other software complexity metrics being used and do these metrics indicate adequate understanding of complexity versus resources (schedule, funding, and staff) available to ensure detailed design success?

2.10.7 Does the SOW require the contractor to define, establish, and operate a metrics data collection, analysis, and reporting system that provides quantitative information on key software program management issues?

3. Program Staffing

3.1 Is there a complete organization structure shown and is the organization consistent with the technical challenges/risks of the program?

3.2 Are key government / contractor interfaces identified and are these consistent with program risks?

3.3 Is adequate staffing (required expertise and quantity of expertise for the contractor) available to execute the schedule?

4. Process Reviews

4.1 Program Management processes as detailed in the Program Management Plan – Are the program management processes that are in place adequate to address the technical challenges of the program and adequate to address program risks?

- 4.1.1 Is there an updated Program Management Plan that is reflective of the emergent technical issues and risks?
- 4.1.2 Are there Program Management processes in place to properly manage the detailed design and attendant technical emphasis areas?
- 4.1.3 Is the program being managed to adjust resources to address issues in the preliminary design?

4.2 Configuration Management (CM) processes as detailed in the CM Plan

- 4.2.1 Is the CM plan in place and up-to-date?
- 4.2.2 Is the preliminary design (each CI) documented and being managed in accordance with the CM Plan?
- 4.2.3 Are changes to the managed CI configurations controlled and tracked to higher level (System Specification and CDD/CPD/ORD), and lower level (preliminary design) documents?

4.3 Systems Engineering processes as detailed in the Systems Engineering Plan (SEP)

- 4.3.1 Is there a defined system engineering process?
- 4.3.2 Are the processes shared by the government and contractor team?
- 4.3.3 Are the SE processes for design development and system trades in place and being used?

4.3.4 Are the planned technical reviews in place and properly placed (event driven vice schedule driven)?

4.3.5 Are the SE processes adequate to support the technical requirements of the technical reviews? Are the technical teams working against a defined technical baseline?

4.3.6 Is the program using a SE automated tool (i.e. DOORS, CORE, SLATE etc.) to manage traceability of each Configuration Item (CI)?

4.3.7 Does the program demonstrate that it is executing a comprehensive HSI process integrated with the Systems Engineering process?

4.3.8 Are processes being established to ensure proper emphasis on identification of Critical Safety Items?

4.4 Acquisition Logistics Support Management & Staffing

4.4.0 Has the ALSP been updated to reflect the maintenance and support concepts at both the system and major hardware configuration item levels?

4.4.1.1 Have Alternative Logistics Concepts been adequately considered and preliminary cost-benefit trades conducted to justify the product support strategy in the ALSP?

4.4.1.2 Does the ALSP reflect force provider performance agreements pertaining to logistics (if any)? At minimum, user reviews and comments concerning maintenance planning and support concepts should be appropriately considered.

4.4.2 Does Supportability IPT have user representation? Where applicable, are Unique Identification (UID) requirements being considered?

4.5 Risk Management processes as detailed in the Risk Management Plan

4.5.1 Is there a defined risk management process? Is the Risk Management Plan up to date and being used?

4.5.2 Is the risk management process shared by the government and contractor team?

4.5.3 Does the risk management process properly track all risks on a continuous basis and provide for update of the mitigation approaches?

4.5.4 Are mitigation approaches in place for all yellow and red risks? 4.5.5 Are risk mitigations resourced?

4.5.6 Does the risk management process provide for risk updates to support the technical reviews and program management (acquisition) reviews?
4.5.7 Is the system's safety Risk mitigation plan being managed by the program Risk Management Board?

4.6 Logistics Budgeting and Funding

4.6.1 Has the program office prepared a Logistics Requirements and Funding Summary (LRFS) or equivalent document?
4.6.2 Is there adequate documentation to support the requirements identified in the LRFS?
Do the funding requirements in the LRFS coincide with the support requirements in the ALSP and other planning documents?
4.6.3 Are the impacts of funding shortfalls understood and plans in place to mitigate risk?
4.6.4 Are all traditional logistics elements estimated for both initial logistics (procurement dollars) and recurring logistics (O&M dollars) estimated in the analysis?
4.6.5 Are logistics-use profiles and associated timelines prepared and updated over the life cycle based on the system detailed design and maintenance plan?
4.6.6 Is there any missing data or cost elements that can improve the confidence in the completeness of the A_o analysis?
4.6.7 Has the LRFS been staffed and approved?

4.7 Test processes as detailed in the Test and Evaluation Master Plan (TEMP) and the contractor's overarching T&E Strategy.
4.7.1 Have developmental test plans been formulated in accordance with the TEMP?
4.7.2 Does the contractor's T&E Strategy meet the TEMP requirements?
4.7.3 Has detailed test planning been initiated?
4.7.4 Is there a clear understanding of the user's deficiency documentation process and is there plan for deficiency documentation and tracking system?
4.7.5 Are test requirements tied to verification requirements? Is there a method to ensure traceability of test requirements to the verification requirements?

4.7.6 Have metrics been established to track the test program?
4.7.7 Does the TEMP address metrics and test procedures to ensure that Human Integration requirements for each domain are delivered and satisfy the CDD/CPD requirements?
4.7.8 Have facilities/test resources (contractor and government) been defined and included in the planning?
4.7.9 Is there User buy-in to the above test planning? Are there provisions for User participation?
4.7.10 Has OT been involved with all aspects of test planning? Are OT requirements considered as a part of DT planning?
4.7.11 Is a Draft flight clearance process established?

4.8 Production processes (ISO 9000, etc.)

4.8.1 Has producibility been considered in the preliminary design?
4.8.2 Have production requirements been properly captured and addressed in the risk assessment?
4.8.3 Have long-lead items been identified and are production processes sufficiently mature for this phase of the program?

4.9 Program utilization of lessons learned
4.9.1 Have the lessons learned by other programs been utilized to reduce risk?

5. Requirements Management

5.1 Is there a process in place for requirements management and is it being applied to properly address this stage of the program?
5.2 Are requirements being managed and traced from higher level (parent) requirements to lower level (offspring) requirements? Are there any orphan or childless requirements?
5.3 Have airworthiness requirements been addressed and documented in the Preliminary Design?
5.4 Is adequate requirements traceability in place to ensure compliance with the CDD/CPD/ORD at OT&E?
5.5 Are both effectiveness and suitability requirements being addressed and allocated in the preliminary design?
5.6 Are there plans in place to ensure test requirements are addressed and documented to the same level of detail as functional requirements (operation and suitability)?

5.7 For PDR, has an Allocated Baseline, or equivalent, been established and is it complete? Is this baseline under CM control?
5.8 Was a Manpower Estimate completed and approved? (ACAT 1 Only)
5.9 Does the ALSP reflect the results of the Training Planning Process Methodology (TRPPM) analysis?

6. System Planning Design

6.1 Are Subsystem requirements traced to system requirements (and CDD/CPD/ORD)?
6.2 Is the Subsystem preliminary design traced to subsystem requirements?
6.3 For the overall system, and each Configuration Item, the following system requirements should be assessed, as applicable:
- 6.3.1 Have the KPP's and other performance requirements, both explicit and derived been defined, quantified and documented?
- 6.3.2 Have all functional requirements in the functional baseline been allocated to a CI and are these documented in the preliminary design and allocated baseline?
- 6.3.3 Have Functional Interface Requirements been defined and included in the preliminary design?

7. Reliability and Maintainability (R&M)

7.1 Have Reliability, Maintainability, and Built-In-Test (BIT) requirements been addressed in the preliminary designs?
7.2 Is the final mission profile definition complete and available?
7.3 Are R&M block diagram and math models to the system level available?
7.4 Is a FMECA to the subsystem level available? Does the FMECA indicate that critical safety items (CSIs) are being identified, and that creation of a composite CSI list is being considered?
7.5 Are preliminary R&M allocations to the system available?
7.6 Is a preliminary reliability prediction using parts count technique to the system level available?
7.7 Is a preliminary maintainability prediction to the system level available?
7.8 Is a preliminary BIT assessment to the system level available?
7.9 Are preliminary thermal, vibrations, and shock analyses to the system level available?
7.10 Is a preliminary derating analysis available?
7.11 Have lessons learned been addressed?

7.12 Have trade studies been addressed?
7.13 Have R&M risk assessment questions been addressed?
7.14 Have test methodologies and metrics for R&M requirements been defined? 7.15 Is there concurrence on the methodology/metrics from OT?

8. Test and Evaluation Equipment

8.1 Has test unique equipment for test aircraft been identified? Is the mechanical and electrical design sufficiently mature for this phase of the Program?
8.2 Has the design installation been coordinated with the appropriate aircraft design groups?
8.3 Has the data processing system been defined and scoped? Do the data processing system requirements match with the facilities requirements?
8.4 Have vendors been identified for instrumentation and data processing hardware and software?

9. Technical Data

9.1 Has a designated Government technical data review authority been established?
9.2 Has an IDE implementation plan been identified as a proposal requirement of the RFP and/or as a contract deliverable?
9.3 Is there a clear plan for the integration of contractor technical information systems and processes for engineering, manufacturing, and logistics support?
9.4 Is the government authorized access to contractor databases necessary to support Systems Demonstration?
9.5 Does the delivery schedule for the Technical Data Package support a competitive production contract?

10. Computer Resources

10.1 Has the functional baseline for software been established?
10.2 Has a software configuration management plan been developed?
10.3 Have measures of effectiveness for software been developed for Systems Demonstration?
10.4 How does the TEMP address testing of computer hardware and software?
10.5 Have requirements for system firmware and software documentation been identified and procured?

11. Program Risk Assessment

11.1 Have risk items in the preliminary design been defined and analyzed?

11.2 Is the risk assessment process tightly coupled with the technical effort and reflective of the technical risks inherent in the preliminary design?
11.3 Has the risk assessment addressed future risks to detailed design, developmental test, operational test, training, and production/fielding of the system?
11.4 Is there adequate buy-in among the technical team as to risks and mitigations?
11.5 Is the technical risk assessment being shared at all levels of the Program Team?
11.6 Have supportability and logistics risk items been defined, analyzed, and included in the Program Risk Assessment?
11.7 Have cost and schedule impacts for supportability and logistics risk mitigation been documented and identified in the LRFS?